

A Popular Record of Our National Forests

THE devastation caused by the recent forest fires in Minnesota, in which hundreds of lives and millions of dollars worth of property have been destroyed, has called attention to the necessity of Governmental protection against such disasters, the magnitude of which renders it impossible for individuals to furnish the requisite safeguards. A timely account of what the national Government has already done in this direction is given in the volume entitled *Our National Forests*, by Richard H. Douai Boerker, an accomplished expert in forestry, who knows whereof he writes, because he is able to speak from his own personal observation and experience. He explains the conditions which gave rise to forest conservation and then describes the organization and administration of the national forests, the extensive measures adopted for the protection of standing timber against fire and the methods whereby the national forests have been made to yield a considerable income to the Government. In no other single book that we know of are the many interesting facts concerning our national forest system so fully elucidated.

The Government and the Forests.

As the owner of vast tracts of public lands, the Government of the United States possesses the same power as that which belongs to any individual or corporate land owner in regard to the management and disposition of the timber thereon. When, however, the Federal authorities acquire timber lands from private owners for the purpose of establishing national forest reservations they act in a Governmental capacity on the ground that the general public welfare demands a conservation of great forests especially near the sources of the principal rivers of the country.

The relation of forests to the rainfall is a comparatively modern concept in physical geography. Only slight reference to the subject is to be found in the earlier text books. Within the last twenty-five years, however, it has come to be a generally recognized fact among men of science that the conservation of the forests near the headwaters of great rivers is essential to preserve the fertility of the agricultural lands in the watersheds, to maintain the navigability of the rivers and also to prevent destructive freshets.

"The practice of forestry has, therefore, become an important part in the household economy of civilized nations. Every nation has learned through the misuse of its forest resources that forest destruction is followed by timber famines, floods and erosion. Mills and factories depending upon a regular stream flow must close down or use other means for securing their power which usually are more expensive. Floods, besides doing enormous damage, cover fertile bottom lands with gravel, boulder and debris which ruins these lands beyond redemption. The

birds, fish and game which dwell in the forests disappear with them. Springs dry up and a luxuriant well watered country becomes a veritable desert. In short, the disappearance of the forest means the disappearance of everything in civilization that is worth while."

Woods and Water Supply.

Many incidents could be cited to show the injurious effects of forest denudation. The contraction and decrease in volume of the River Euphrates in Mesopotamia are attributed to the destruction of the timber which once grew along its entire course almost to the sea. Alexander Buchan, the distinguished Scottish meteorologist, mentions a striking example of the effect of forest vegetation upon the waters of a South American lake. The valley of Aragua in Venezuela is wholly shut off from the sea and all its rivers being deprived of any ocean outlet, unite and form Lake Tacarigua. The forests around this lake before the revolution which ousted the Spanish power in South America, had been destroyed to make room for plantations, and the lake had so diminished in size it seemed likely to dry up entirely. During the war of independence, however, which lasted twenty-two years, these lands remained wholly uncultivated and the tropical forests grew up again around the lake, so that at the end of the war it was found that the waters had resumed their old level and indeed covered most of the lands which had been occupied by the plantations.

Half Our Forests Gone.

When Jamestown in Virginia was settled by the London Company in 1607 and when the Pilgrims landed at Plymouth in 1620, the country from the Atlantic seaboard to the Mississippi River was covered with a wilderness of unbroken virgin forests. It is estimated that the American colonies originally possessed fifty-two hundred billion feet of merchantable timber, while to-day only twenty-nine hundred billion feet remain. In 140 years more than half of the original supply has been exhausted and the present rate of cutting exceeds the annual growth of the forests.

It is manifest, therefore, that unless the consumption of timber is lessened or the production increased there will ultimately be a dangerous shortage in the supply—we say dangerous because as has often been observed, wood enters into the daily life of mankind from birth to death, from the cradle to the coffin. Mr. Boerker estimates that the twenty-two billions of cubic feet of wood which we take from our forests every year is enough lumber to construct seven board walks twenty-five feet wide from the earth to the moon, or a board walk one-third of a mile wide completely around the earth at the equator. The lumber industry, measured by the number of persons employed, is the largest manufacturing industry in the country, furnishing work to over a million wage earners and yielding products valued at over two billions of dollars a year.

Attempts at Reforestation.

The first attempt to check the dangerous destruction of forests by legislation was made in Wisconsin in 1867 and in 1869 the Legislatures of Michigan and Maine appointed committees to investigate the subject. In 1873 Congress sanctioned an effort to reforest the treeless prairies of the Western States by passing the timber culture act, which entitled a person who planted forty acres of land with timber to receive title to 160 acres of the public domain. This piece of legislation, however, says Mr. Boerker, proved a dismal failure and was finally repealed, principally because the settlers had no knowledge of planting trees.

"The first constructive piece of legislation enacted by Congress of the United States was the act of August 16, 1876. This was the first of a series of acts passed by Congress which, although occurring many years apart in some cases, put forest conservation upon a firm basis." Dr. Franklin B. Hough, an accomplished scholar, was the first Commissioner of Forestry under this act and in consequence of his labors a permanent Division of Forestry was created in the following year under the Commissioner of Agriculture. Since this the National Forest Service has been developed so that the number of its employees has increased from sixty-one in 1898 to 3,544 on June 30, 1917. On that date there were 147 national forests occupying a total area of 155,000,000 acres.

"Besides these forests there have been acquired or approved for purchase under

the Weeks law over 1,500,000 acres in the States of Georgia, Maine, New Hampshire, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. These lands are now under protection and will gradually be consolidated into national forests." The Weeks law, passed on March 1, 1911, empowered the national Government, with the consent of the States in which the forests might be located, to acquire forest lands on the watersheds of navigable streams in the Appalachian and White Mountains. All lovers of the White Mountains will rejoice at the practical certainty which this legislation guarantees that this great recreation resort will thus be preserved for the benefit of all the people.

Fire Protection.

The most active duty of the National Forest Service is the protection of the forests against fire. During the year 1917 there were 7,814 forest fires in the national forests, of which 1,862 occurred in California. We suppose that most persons if asked what was the commonest cause of forest fires would attribute them to the agency of the railways running through the forests, but as a matter of fact it appears that lightning causes forest fires far more frequently than railroads. Thus in 1917 lightning caused 27 per cent. of the forest fires in the national forests; unknown agencies, 17 per cent.; campers, 17 per cent.; incendiaries, 12 per cent.; railroads only 13 per cent.; brush burning, 7 per cent.; sawmills, 3 per cent., and all other causes 4 per cent.

The 27 per cent. of fires caused by lightning are obviously not preventable and these can be dealt with only by getting to them as soon as possible after they are started. Towers and other forest fire lookouts are maintained by the Government, in which forest rangers are stationed to watch for fires, and since the establishment of these stations outbreaks of fires have been dealt with far more successfully than before. In reference to the

agency of lightning, Mr. Boerker says: "Lightning sets fire to trees, especially dead and dry ones. In the California mountains lightning storms without rain are frequent and these do great damage. The author has seen as many as nine forest fires started by a single storm inside of half an hour."

Among the subsidiary functions of the National Forest Service is the study of poisonous plants by the Bureau of Plant Industry and the means of reducing the losses occasioned to live stock by eating these plants. "While the handling of stock to avoid the poison areas can eliminate the losses to a small extent, it has been found that the most expeditious remedy is in digging out and destroying the poisonous plants. On the Stanislaus National Forest in California a cattle range of about 14,000 acres containing about sixty-seven acres of larkspur was cleared of this weed at a cost of about \$695. The average loss of cattle in previous years had been about thirty-four head. Following the eradication of the larkspur the loss was four head. The net saving was valued at \$1,800." In other national forests similar operations are going on for the destruction of poisonous plants. The author's statement on this subject contradicts the prevalent notion that domestic animals, especially cattle, are wise enough to abstain from eating deleterious vegetation.

Mr. Boerker's book is a convenient and most useful work of reference on everything worth knowing concerning the creation, organization and administration of the national forests of the United States.

OUR NATIONAL FORESTS. BY RICHARD H. DOUAI BOERKER. The Macmillan Company. \$2.50.

The Oxford University Press has just published a volume by Prof. W. P. M. Kennedy, Department of Modern History, University of Toronto, entitled *Documents of the Canadian Constitution, 1759-1913* (pp. xxxii. 707). \$4.

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